



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/051,057 | 01/22/2002 | Henry P. Offer | 1585-305 | 2884 |

7590

06/26/2003

NIXON & VANDERHYE P.C.
8th Floor
1100 North Glebe Road
Arlington, VA 22201-4714

| |
|----------|
| EXAMINER |
|----------|

JOHNSON, JONATHAN J

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1725

DATE MAILED: 06/26/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,057

Applicant(s)

OFFER ET AL.

Examiner

Jonathan Johnson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5-5-03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 13-15, and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Offer (5,688,419) in view of Thomas, Jr. et al. (3,696,228). With respect to Claim 1, Offer teaches welding a first metal to the surface of a second metal (Column 11, Line 62) under conditions of low heat input (Column 12, Line 7 and Column 8, Lines 1-2) to achieve reduced thermal sensitization (Column 1, Lines 61-63); the second metal is a component of a nuclear reactor (Column 1, Line 17). Thomas, Jr. et al. teaches cladding a nuclear pressure vessel (Column 6, Lines 60-68 and Column 7, Lines 1-25). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the welding technique as taught by Offer to utilize cladding the vessel in order to provide an effective corrosion resistant lining (see Thomas, Jr. et al. Abstract).

With respect to Claim 3, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 1. Offer teaches welding with a weld torch (Abstract).

Art Unit: 1725

With respect to Claim 4, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 3. Offer teaches the welding torch speed travels at a speed in excess of 10 inches per minute (Abstract).

With respect to Claim 5, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 3. Offer teaches the welding torch speed travels at a speed in excess of 10 inches per minute (Column 10, Lines 49-50).

With respect to Claim 6, Offer teaches the requirement of a low heat input (Column 2, Lines 51-55) and a high travel speed (Column 14, Lines 1-3). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a heat input of 1.5 kJoules per cm in order to minimize the heat input into the system (see Offer Column 2, Lines 51-55).

With respect to Claim 7, the teachings of Offer is the same as relied upon in the rejection of Claim 6. Offer teaches the requirement of a low heat input (Column 2, Lines 51-55) and a high travel speed (Column 14, Lines 1-3). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a heat input of 0.5 to 1 kJoules per cm in order to minimize the heat input into the system (see Offer Column 2, Lines 51-55).

With respect to Claim 13, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 6. Offer teaches the welding is carried out over a period of

Art Unit: 1725

time such that the metal temperature during weld cooling is insufficient to allow carbide formation on grain boundaries (Column 2, Lines 39-50 and Column 8, Lines 17-35)

With respect to Claim 14, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 4. Offer teaches welding is carried out over a period of time in the sensitizing range such that the metal temperature during weld cooling is insufficient to allow carbide formation on grain boundaries (Column 2, Lines 39-50 and Column 8, Lines 17-35)

With respect to Claim 15, the teachings of Offer is the same as relied upon in the rejection of Claim 6. Offer teaches welding steel (abstract), which results in formation of Delta Ferrite.

With respect to Claim 16, Offer teaches welding a first metal to the surface of a second metal (Column 11, Line 62) under conditions of low heat input (Column 12, Line 7 and Column 8, Lines 1-2) to achieve reduced residual stress (Abstract). Thomas, Jr. et al. teaches cladding a nuclear pressure vessel (Column 6, Lines 60-68 and Column 7, Lines 1-25). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the welding technique as taught by Offer to utilize cladding the vessel in order to provide an effective corrosion resistant lining (see Thomas, Jr. et al. Abstract).

Art Unit: 1725

With respect to Claim 17, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 16. Offer teaches the first metal is water cooled (Column 2, Lines 28-29).

With respect to Claim 18, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 16. Offer teaches the first metal is air cooled (Column 4, Line 12).

With respect to Claim 19, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 16. Offer teaches the far surface exhibits reduced residual stress (Figures 6A and 6B).

With respect to Claim 20, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 16. Offer teaches the first metal has a near surface that experiences reduced residual stress (Figures 6A and 6B).

With respect to Claim 21, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 16. Offer teaches the first metal is adjacent to a near surface of the second metal (Figure 1C items 2 and 6).

With respect to Claim 22, the teachings of Offer and Thomas Jr. et al. are the same as relied upon in the rejection of Claim 16. Offer teaches the second metal is adjacent to a near surface of the first metal (Figure 1C items 2 and 6).

Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Offer '419 and Thomas Jr. et al. as applied to claim 1 above, and further in view of Offer (5,714,735).

With respect to Claim 8, Offer '735 teaches the use of a filler metal (Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the welding technique as taught by Offer '419 and Thomas Jr. et al. to utilize a filler metal in order to increase the deposition rate of the filler material (see Offer '735 Column 1, Lines 35-47).

With respect to Claim 9, the teachings of Offer '419, Thomas Jr. et al., and Offer '735 are the same as relied upon in the rejection of Claim 8. Offer '735 teaches the use of a noble metal (Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the welding technique as taught by Offer '419, Thomas Jr. et al., and Offer '735 to utilize a filler metal in order to increase the deposition rate of the filler material (see Offer '735 Column 1, Lines 35-47).

With respect to Claim 10, the teachings of Offer '419, Thomas Jr. et al., and Offer '735 are the same as relied upon in the rejection of Claim 9. Offer '735 teaches the use of palladium (Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the welding technique as taught by Offer '419, Thomas Jr. et al., and Offer

Art Unit: 1725

'735 to utilize a filler metal in order to increase the deposition rate of the filler material (see Offer '735 Column 1, Lines 35-47).

With respect to Claim 11, the teachings of Offer '419, Thomas Jr. et al., and Offer '735 are the same as relied upon in the rejection of Claim 9. Offer '735 teaches the use of a noble filler metal and to increase its speed (see Offer '735 Column 1, Lines 35-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the welding technique as taught by Offer '419, Thomas Jr. et al., and Offer '735 to utilize a filler metal of 1% or less in order to increase the deposition rate of the filler material (see Offer '735 Column 1, Lines 35-47).

With respect to Claim 12, the teachings of Offer '419, Thomas Jr. et al., and Offer '735 are the same as relied upon in the rejection of Claim 9. Offer '735 teaches the use of a noble filler metal and to increase its speed (see Offer '735 Column 1, Lines 35-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the welding technique as taught by Offer '419, Thomas Jr. et al., and Offer '735 to utilize a filler metal in the amount of 0.25 to 0.75 in order to increase the deposition rate of the filler material (see Offer '735 Column 1, Lines 35-47).

Response to Arguments

Applicant argues that Thomas Jr. et al. and Offer are nonanalogous art because Thomas relates to construction of heavy-walled pressure vessels where the corrosion resistance of the

Art Unit: 1725

final composite is provided via a “roll-bonded” alloy layer. The examiner agrees. It appears applicant has interpreted the teachings of Thomas too narrowly. While it is true that Thomas teaches that one form of corrosion resistance is a “roll-bonded” alloy layer, Thomas also teaches applying a cladding material over the pressure vessel to provide greater strength and an additional layer of corrosion protection (see Thomas Column 2, Line 20-Column 4, Line 10). Offer teaches the detrimental effects of stress corrosion cracking (SCC) in a pressure vessel (see Offer Column 1, Lines 40-65). In particular Offer explains that welding and other heating processes directly contribute to the pressure vessel’s susceptibility to SCC (see Offer Column 1, lines 57-63). Offer then suggests a process to reduce SCC, namely a low-residual-stress welding process (see Offer Column 3, Lines 20-65). Therefore, as stated in the previous office action, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the welding technique as taught by Offer to utilize cladding the vessel in order to provide an effective corrosion resistant lining (see Thomas, Jr. et al. Abstract).

In response to applicant's argument that it would not have been obvious to one of ordinary skill in the art to provide control of corrosion by engineering a range of noble metal to limit the electrochemical potential, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Art Unit: 1725

Applicant next argues that it would not have been obvious to find a practical threshold of heat input below which thermal sensitization will not occur because “decades of trying to do so have all failed until the current work was performed.” (Paper #4, page 7, second full paragraph). Applicant is reminded that arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Applicant’s statements of long-felt need must be supported by an appropriate affidavit or declaration.

Applicant next argues that it was not known that a very fine morphology of Ferrite is formed in weld samples produced while operating above the claimed minimum torch speed. (Paper #4, page 7, third full paragraph). In other words, Applicant acknowledge that they have discovered a new property when welding under low heat input to achieve reduced thermal sensitization. It is the examiner’s position that since the instant welding process is encompassed by the prior art, the delta ferrite formation is also encompassed by the prior art. When the examiner has reason to believe that functional language asserted to be critical for establishing novelty in claimed subject matter may, in fact be an inherent characteristic of the prior art, the burden of proof is shifted to the applicant to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 703-308-0667. The examiner can normally be reached on M-Th 7AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

jj
June 23, 2003



M. ALEXANDRA ELVE
PRIMARY EXAMINER